UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,645	09/28/2001	Jean-Gabriel Remy	S98.12-0001	5002

7590 07/13/2004

Robert M. Angus
Westman, Champlin & Kelly
International Centre, Suite 1600
900 Second Avenue South
Minneapolis, MN 55402-3319

EXAMINER	
VU, THAI	

ART UNIT	PAPER NUMBER
2643	5

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,645	REMY, JEAN-GABRIEL	
	Examiner	Art Unit	
	Thai Vu	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 9, 10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Larsson et al. (PAT US 6,282,427 B1 filed 07-14-1999, hereinafter Larsson).

Regarding claim 1, Larsson teaches the following: Process for calculating the position of a mobile station (MS) belonging to a cellular radio communication system, starting from an identifier of a current geographic cell in which the said mobile station is located, characterized in that it includes the following steps:

calculate a modeled geographic representation of the current cell (column 9 claim 1 lines 45-46);

calculate the barycentre of the said modeled geographic representation of the current cell (FIG. 6 block 61; Column 4 lines 34-37) ;

calculate an uncertainty area (FIG. 4; column 3 lines 56-58), with a predetermined geometric shape, centred on the said barycentre and the area of

which is approximately equal to the area of the said modeled geographic representation of the current cell [FIG. 3: the doted circle and hexagon have approximately the same area] (FIG. 3).

and in that the position of the mobile station is defined by the said barycentre with an uncertainty equal to the said uncertainty area [FIG. 3: the center, whose location is defined by the coordinate system, represents the entire communication cell which includes the mobile unit located inside the coverage area] (FIG. 3 Column 4 lines 2- 6).

Regarding claim 9, Larson teaches:

A device for calculating the position of a mobile station belonging to a cellular radio communication system starting from the identifier of a current geographic cell in which the said mobile station is located, characterized in that it comprises:

means of calculating a modeled geographic representation of the current cell (FIG.1 LMUs block column 3 lines 3-4; column 11 claim 20);

means of calculating the barycentre of the said modeled geographic representation of the current cell (FIG. 6 block 61; Column 4 lines 34-37);

means of calculating an uncertainty area (FIG. 4; column 3 lines 56-58), with a predetermined geometric shape centred on the said barycentre and the area of which is approximately equal to the area of the said modeled geographic representation of the current cell [FIG. 3: the doted circle and hexagon have approximately the same area] (FIG. 3);

the position of the mobile station being defined by the said barycentre with an uncertainty equal to the said uncertainty area [FIG. 3: the center, whose location is defined by the coordinate system, represents the entire communication cell which includes the mobile unit located inside the coverage area] (FIG. 3 Column 4 lines 2- 6).

Regarding claim 10, Larson teaches the following: the process according to claim 9, characterised in that it is integrated into a radio frequency planning tool [Reads on Mobile Location Center MLC] for the geographic cells in the said cellular radio communication system (column 9 lines 31-32).

Regarding claim 12, Larson teaches the following: Computer program (column 9 lines 28-30) intended for calculating the position of a mobile station (MS) belonging to a cellular radio communication system (Abstract) starting from an identifier of a current geographic cell in which the said mobile station is located (claim 1), the said computer program comprising portions/means/program code instructions recorded on a medium that can be used in a computer, comprising:

programming means (column 9 lines 28-32) that can be read by a computer to perform the calculation step for a modeled geographic representation of the current cell (claim 1);

programming means (column 9 lines 28-32) that can be read by a computer to perform the calculation step to determine the barycentre of this said modeled geographic representation of the current FIG. 6 block 61; Column 4 lines 34-37);

programming means (column 9 lines 28-32) that can be read by a computer to perform the calculation step to determine an uncertainty area with a predetermined geometric shape centred on the said barycentre and the area of which is approximately equal to the area of the said modeled geographic cell representation of the current cell [FIG. 3: the doted circle and hexagon have approximately the same area] (FIG. 3);

the position of the mobile station being defined by the barycentre, with an uncertainty equal to the uncertainty area. [FIG. 3: the center, whose location is defined by the coordinate system, represents the entire communication cell which includes the mobile unit located inside the coverage area] (FIG. 3 Column 4 lines 2- 6).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 2, 5, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson in view of Reed et al. (PAT US 6,161,018 hereinafter Reed).

Regarding claim 2, Larsson does not teach the calculation of a modeled geographic representation of the current cell consists of using a radio prediction tool to calculate a set of points in which the radio frequency field in the current cell is stronger than that in other cells.

However Reed teaches the modeled service area can be calculated based on strongest RF ray which teaches the following: teach the calculation of a modeled geographic representation of the current cell consists of using a radio prediction tool to calculate a set of points in which the radio frequency field in the current cell is stronger than that in other cells (FIG. 3 column 2 lines 64-67).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larson method to provide the following: calculation of a modeled geographic representation of the current cell consists of calculating a set of points in which the radio frequency field in the current cell is stronger than that in other cells as the arrangement would narrow the location uncertainty of the mobile unit thus its location determination is more accurate.

Regarding claim 5, Larson does not teach the following: position of the mobile station is calculated dynamically.

However Reed teaches adjustments are needed in predicting models based on differences (locations, objects...) which teaches the following: position of the mobile station is calculated dynamically (column 9 lines 22-36).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the following: position of the station is calculated dynamically as the arrangement would keep updating input parameters thus the location of the mobile unit can be determined with low errors.

Regarding claim 15, Larson does not teach the following: position of the mobile station is calculated dynamically.

However Reed teaches adjustments are needed in predicting models based on differences (locations, objects...) which teaches the following: position of the mobile station is calculated dynamically (column 9 lines 22-36).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the following: position of the station is calculated dynamically as the arrangement would keep updating input parameters thus the location of the mobile unit can be determined with low errors

Regarding claim 19, Larson teaches computer program [reads on software] (column 9 lines 28-30) characterised in that the said programming means to perform the calculation step for a modeled geographic representation of the current cell (column 9 claim 1 lines 45-46);

Larson does not teach the following: programming means to calculate a set of points in which a radio frequency field in the current cell is stronger than that in other cells

However Reed teaches the modeled service area can be calculated based on strongest RF ray which teaches the following: the calculation of a modeled geographic representation of the current cell consists of using a radio prediction tool to calculate a set of points in which the radio frequency field in the current cell is stronger than that in other cells (FIG. 3 column 2 lines 64-67).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larson method to provide the following: calculation of a modeled geographic representation of the current cell consists of calculating a set of points in which the radio frequency field in the current cell is

stronger than that in other cells as the arrangement would narrow the location uncertainty of the mobile unit.

5. Claims 3, 4 and 6-8, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson and Reed as applied to claim 2 above, and further in view of Kingdon et al. (PAT 6,078,818, hereinafter Kingdon).

Regarding claim 3, the combination differs from claim 3 in that it does not teach the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles.

However Kingdon teaches: the service area can have a shape of a circle, an eclipse and a polygon, which teaches the following: the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify combination method of Larson and Reed to provide the following: the service area can have a shape of a disk or a polygon as the arrangement would provide shape more accurately reflecting the location of the mobile unit as taught by Kingdon (column 4 lines 50-52).

Regarding claim 4, the combination of Larson and Reed does not teach the following: the geometric shape is a polygon and in that the said polygon is oriented along the largest direction of the current cell.

However Kingdon teaches the geometric shape to be ellipse which teaches the shape is oriented along the largest direction of the current cell (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Larson and Reed to provide the following: polygon is oriented along the largest direction of the current cell as the arrangement would allow the modeled area to be calculated accurately but not overly complicated.

Regarding claim 6, the combination differs from claim 6 in that it does not teach the following: a step to extract the identifier of the current cell from at least one signal message circulating on the radio communication system network.

However Kingdon teaches a positioning request message including information about the mobile unit such as shape, accuracy of the calculated service area sent and received in the network which teaches the following: a step to extract the identifier of the current cell from at least one signal message circulating on the radio communication system network (FIG. 3 Positioning Request block; column 4 lines 18-24, 34-40).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination method as taught by Larsson and Reed to provide the following: a message for informing the identifier of the mobile unit is transferred in the network as the arrangement would provide information about the mobile user thus positioning services can be provided.

Regarding claim 7, the combination differs from claim 7 in that it does not teach the following: the extraction is triggered if at least one of the following conditions is satisfied when the mobile station makes a call:

the number of the mobile station belongs to a predetermined list of calling numbers;

the number called by the mobile station belongs to a predetermined list of called numbers;

the current cell belongs to a predetermined list of cells.

However Kingdon teaches a system providing positioning services including:

databases containing subscriber information associated with a given mobile station which teaches the following: the number of the mobile station belongs to a predetermined list of calling numbers (column 2 lines 6-8);

and service is used for subscriber to call each other in the network which teaches the following: the number called by the mobile station belongs to a predetermined list of called numbers (column 1 lines 40-41);

plurality of location areas that belong to the network and each location area includes plurality cells which teaches the following: the current cell belongs to a predetermined list of cells (column 1 lines 32-38).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination method as taught by Larson and Reed to provide the following: information about the user is extracted if one of the following is true: the calling user, the communication cell or the called user belongs to a list as the arrangement would enable wireless providers to provide more services other to customers as taught by Kingdon.

Regarding claim 8, The combination differs from claim 8 in that it does not teach the following: the position of the mobile station and the associated uncertainty are input into a positioning database so that at least one geodependent service can be provided.

However Kingdon teaches databases containing subscriber information including location information based on which services are provided which teaches the following: the position of the mobile station and the associated uncertainty are input into a positioning database so that at least one geodependent service can be provided (column 1 lines 55-60; column 2 lines 9-21).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify the combination method as taught by Larson and Reed to provide the following: database to maintain mobile stations' information as the arrangement would inform the system mobile user location thus positioning service services can be provided.

Regarding claim 14, the combination of Larson and Reed does not teach the following: the geometric shape is a polygon and in that the said polygon is oriented along the largest direction of the current cell.

However Kingdon teaches the geometric shape to be ellipse which teaches the shape is oriented along the largest direction of the current cell (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Larson and Reed to

provide the following: polygon is oriented along the largest direction of the current cell as the arrangement would allow the modeled area to be calculated accurately but not overly complicated.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Larson and Reed as applied to claim 19 above, and further in view of Kingdon.

Regarding claim 20, Larsson does not teach the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles.

However Kingdon teaches: the service area can have a shape of a circle, an eclipse and a polygon, which teaches the following: the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Larson method to provide the following: the service area can have a shape of a disk or a polygon as the arrangement would provide shape more accurately reflecting the location of the mobile unit as taught by Kingdon (column 4 lines 50-52).

7. Claims 13,16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson in view of Kingdon.

Regarding claim 13, Larsson does not teach the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles.

However Kingdon teaches: the service area can have a shape of a circle, an eclipse and a polygon, which teaches the following: the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Larsson method to provide the following: the service area can have a shape of a disk or a polygon as the arrangement would provide shape more accurately reflecting the location of the mobile unit as taught by Kingdon (column 4 lines 50-52).

Regarding claim 16, Larson does not teach the following: step to extract the identifier of the current cell from at least one signal message circulating on the radio communication system network.

However Kingdon teaches a positioning request message including information about the mobile unit such as shape, accuracy of the calculated service area sent and received in the network which teaches the following: a step to extract the identifier of the current cell from at least one signal message circulating on the radio communication system network (FIG. 3 Positioning Request block; column 4 lines 18-24, 34-40).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Larsson method to provide the following:

a message for informing the identifier of the mobile unit is transferred in the network as the arrangement would as the arrangement would provide information about the mobile user thus positioning services can be provided.

Regarding claim 17, Larson does not teach the following: the extraction is triggered if at least one of the following conditions is satisfied when the mobile station makes a call:

the number of the mobile station belongs to a predetermined list of calling numbers;

the number called by the mobile station belongs to a predetermined list of called numbers;

the current cell belongs to a predetermined list of cells.

However Kingdon teaches a system providing positioning services including:

databases containing subscriber information associated with a given mobile station which teaches the following: the number of the mobile station belongs to a predetermined list of calling numbers (column 2 lines 6-8);

and service is provided for subscriber to call each other in the network which teaches the following: the number called by the mobile station belongs to a predetermined list of called numbers (column 1 lines 40-41);

plurality of location areas that belong to the network and each location area includes plurality cells which teaches the following: the current cell belongs to a predetermined list of cells (column 1 lines 32-38).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Larson method to provide the following: information about the user is extracted if one of the following is true: the calling user, the communication cell or the called user belongs to a list as the arrangement would enable wireless providers to provide more services other to customers as taught by Kingdon.

Regarding claim 18, Larson does not teach the following: the position of the mobile station and the associated uncertainty are input into a positioning database so that at least one geodependent service can be provided.

However Kingdon teaches databases containing subscriber information including location information based on which services are provided which teaches the following: the position of the mobile station and the associated uncertainty are input into a positioning database so that at least one geodependent service can be provided (column 1 lines 55-60; column 2 lines 9-21).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Larson method to provide the following: database to maintain mobile stations' information as the arrangement would inform the system mobile user location thus positioning service services can be provided.

Regarding claim 21, Larsson does not teach the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles.

However Kingdon teaches: the service area can have a shape of a circle, an eclipse and a polygon, which teaches the following: the geometric shape belongs to the group comprising; disks; polygons, preferably hexagons, squares and equilateral triangles (column 4 lines 37-40; claim 27).

Thus it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Larson method to provide the following: the service area can have a shape of a disk or a polygon as the arrangement would provide shape more accurately reflecting the location of the mobile unit as taught by Kingdon (column 4 lines 50-52).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Vu whose telephone number is 703-305-3417. The examiner can normally be reached on 9:00AM-6:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-3900. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thai Vu
Examiner
Art Unit 2643

Melur. Ramakrishnaiah

MELUR RAMAKRISHNAIAH
PRIMARY EXAMINER